Amendments to the Specification:

Please replace the paragraph located on page 26, lines 17-23 of the as-filed specification with the following paragraph:

A—In the basal state, JAK2 is fixed to box 1 in the non-phosphorylated state.
B—The binding to Epo alters the conformation of the receptor and enables transphosphorylation of JAK2 which in return phosphorylates the intracytoplasmic residues of Epo-R thereby recruiting the different positive (->) or negative (-|) effectors of signal transduction.

Please replace the paragraph located on page 26, line 27 of the as-filed specification with the following paragraph:

2B—culture without Epo
The erythroid differentiation is studied by flow cytometry on the expression of two markers CD36 and GPA. GPA is a late marker of erythroid differentiation and its expression is dependent on the presence of Epo during normal differentiation. In PV, GPA is expressed in the absence of Epo, implying that terminal differentiation does not require Epo.

Please replace the paragraph located on page 26, lines 28-29 of the as-filed specification with the following paragraph:

FIG. 3: Inhibition of JAK-STAT, Pi3-K and Src kinase pathways prevent spontaneous erythroid differentiation. Expression of GPA in culture of PV erythroid cells in the absence of Epo is blocked by JAK2, PI3 kinase and SRC inhibitors.

Please replace the paragraph located on page 26, lines 32-35 of the as-filed specification with the following paragraph:

5A—Electroporation of a siRNA against JAK2 into erythroid progenitors inhibit their growth and thus their capacities to form colonies.

Please replace the paragraph located on page 26, line 36 of the as-filed specification with the following paragraph:

5B—Structure of JAK2 with V617F mutation (exon 12, now exon 14).

Please replace the paragraph located on page 27, lines 29-30 of the as-filed specification with the following paragraph:

Lanes 0 to 6: HEL cells treated (1 to 6) or non-treated (0) with siRNA V617F Jak2.

Please replace the paragraph located on page 27, line 31 of the as-filed specification with the following paragraph:

Lane C+: 293HEK cells transfected with the V617F Jak2RV vector

Please replace the paragraph located on page 27, line 32 of the as-filed specification with the following paragraph:

Lane C-: 293 HEK

Please replace the paragraph located on page 27, line 36 of the as-filed specification with the following paragraph:

Lane Je: K562 cells treated with siRNA WT Jak2

Please replace the paragraph located on page 27, line 37 of the as-filed specification with the following paragraph:

Lanes 0 to 6: K562 cells treated with siRNA V617F Jak2

Please replace the paragraph located on page 28, line 1 of the as-filed specification with the following paragraph:

Lane C-: 293HEK (no expression of JAK2).